

2. ILLUSTRATIONS OF THE QUASI-CRYSTALLOID BIOPOLYMER STRUCTURES FROM THE EXPLOSIVE DANGEROUS COAL PULVER

Short communication

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The first biopolymer units were observed in fossil exines from the Eocene sediments of Mississippi (U. S. A.) by KEDVES et al (1974). The quasi-crystalloid skeleton of the plant cell wall was first established in the partially degraded exine of *Pinus griffithii* McCLELL. The idea of the possibility of getting a new energy basis by breaking the quasi-crystalloid skeleton was first mentioned by the author in 1987. On the other hand, the degradation of the organic material under natural conditions — sedimentation — may also discover the metastable quasi-crystalloid skeleton. This fossil biopolymer structure can be presented in the coal layers, too, in the mines under exploitation. The dry, finely granulous coal pulver containing a quasi-crystalloid skeleton may be explosive, liberating high energy. A research program was started with the coal pulver samples of Jurassic coal basin of the Mecsek Mountains. Some previous papers were published or are in print (KEDVES 1989a, b). Elaboration of the detailed results is under progress. In this paper a new method of illustration of the TEM picture of the explosion dangerous coal sample together with the results of the rotations are presented on one single plate. This kind of illustrations seems to be suitable to the necessary modifications for further biopolymer investigations of recent and fossil plant cell walls.

In plate 2.1. the gas channel is well shown in the coal particle. This is the very light part. The globular units of the quasi-crystalloid skeleton are also well shown. At the edges of the pentagonal polygon chosen for symmetry investigations are numbered. The rotation axis and the results of rotations are illustrated with the formula of the rotation. These latter mentioned pictures are oriented in the AP axis.

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References

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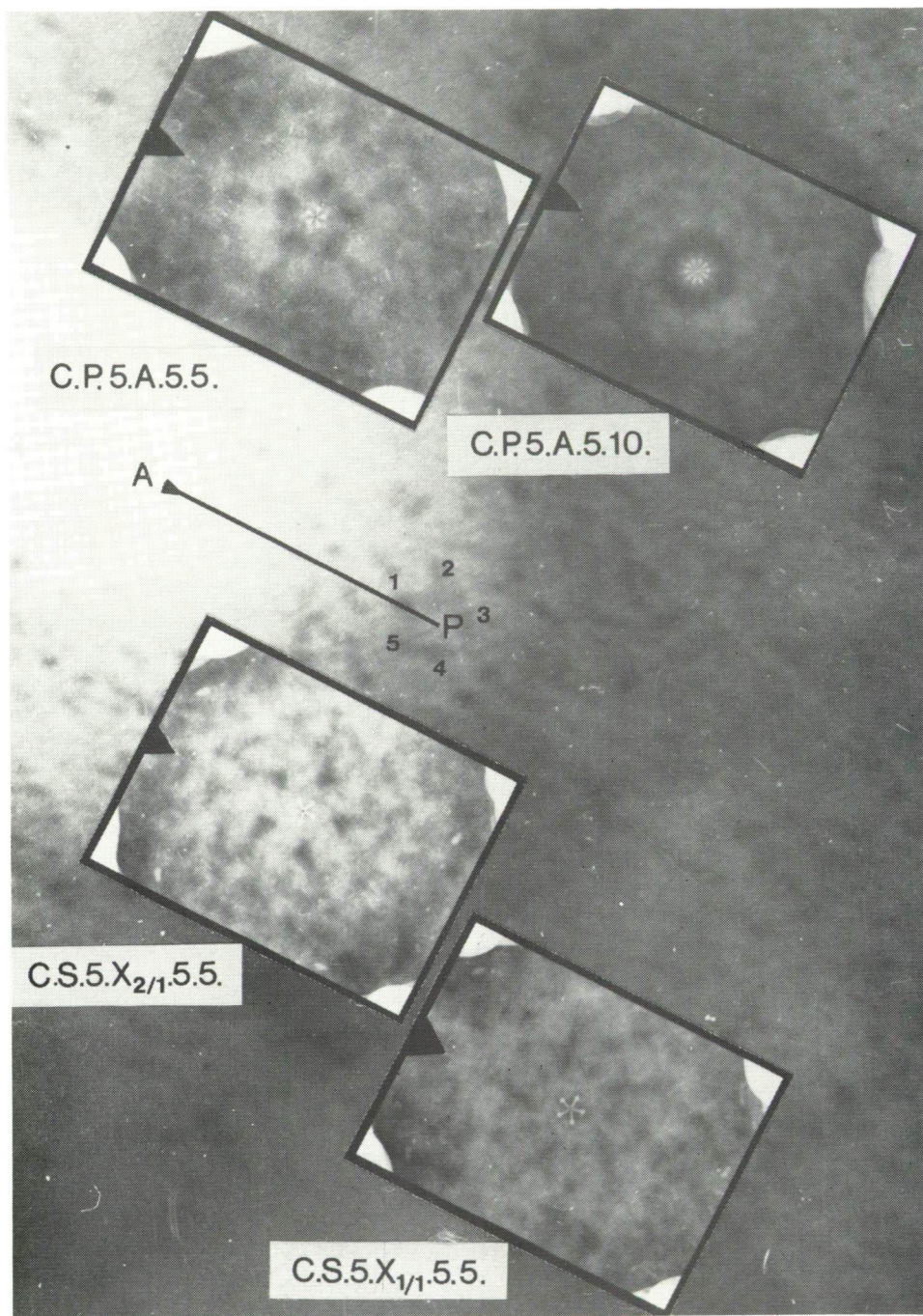


Plate 2.1.

Coal sample number: 148. Experiment No: 160, basic negative no. 7547. Magnification of all pictures: 500.000 x.